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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/713,683	11/14/2003	Hiroaki Yagishita	WAKA 20.745	2860

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EXAMINER	
MURSKO, MARC J	
ART UNIT	**PAPER NUMBER**
2834	

DATE MAILED: 04/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/713,683	YAGISHITA, HIROAKI	
	Examiner	Art Unit	
	Marc J. Mursko	2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) _____ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-10 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-3 and 7-10 are being rejected under 35 U.S.C. 103(a) as being unpatentable over by Oda (U.S. Patent 6,452,460) in view of Fukuyo (U.S. Patent 4,167,686) and Nishimura (U.S. Patent 6,859,116) In Column 1 in lines 47-50 in Oda, Oda teaches a crystal blank with a pair of excitation electrodes and a pair of extension electrodes extended from said excitation electrodes. In Column 3 in line 27 of Oda, Oda teaches a mounting member and in the same column in lines 54-56, Oda teaches a pair of connection terminals. In the same column in lines 20-28, Oda teaches that a conductive material is disposed between said connection terminals and said extension electrodes in such a way that said second surface principal surface faces said mounting member and also in the same column in lines 29-35, Oda teaches that said crystal blank is held by said mounting member at the position of the end to which said extension electrodes are extended and electrically connected to said connection terminals.

Oda does not teach a crystal blank that has a first principal surface and a second principal surface, where an inclined surface is formed at one end of said first principal

surface, and said second principal surface is flat-shaped, and said extension electrodes are extended toward an end at which said inclined surface is formed.

In U.S. Patent 4,167,686, in Column 6 lines 66-68 continued in Column 7 lines 1-4, Fukuyo teaches a crystal blank that has a first principal surface and a second principal surface, where an inclined surface is formed at one end of said first principal surface, and said second principal surface is flat-shaped.

In U.S. Patent 6,859,116, in Column 2 lines 57-59, Nishimura teaches extension electrodes that are extended toward an end at which said inclined surface is formed.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the teaching of Oda of a crystal blank with a pair of excitation electrodes and a pair of extension electrodes extended from said excitation electrodes, of a mounting member and a pair of connection terminals, of a conductive material which is disposed between said connection terminals and said extension electrodes in such a way that said second surface principal surface faces said mounting member and that said crystal blank is held by said mounting member at the position of the end to which said extension electrodes are extended and electrically connected to said connection terminals, and the teaching of Fukuyo of a crystal blank with a first principal surface and a second principal surface, where an inclined surface is formed at one end of said first principal surface, and said second principal surface is flat-shaped, and the teaching of Nishimura of extension electrodes that are extended toward an end at which said inclined surface is formed because then the crystal blank would have

smaller dimensions thus have better commercial uses for the trend in electronics is to make circuits as small as possible.

As for claim 2, in addition to what was explained above in Oda in view of Fukuyo and Nishimura, in column 3 lines 26-28 of Oda, Oda teaches a conductive material that comprises a conductive adhesive.

As for claim 3, in addition to what was explained above in Oda in view of Fukuyo and Nishimura, in Column 1 lines 47-50 of Oda, Oda teaches a crystal unit wherein said extension electrodes are extended toward both sides of one end of said crystal blank.

As for claim 7, in addition to what was explained above in Oda in view of Fukuyo and Nishimura, in Column 8 lines 38-42 of Nishimura, Nishimura teaches a crystal unit wherein said inclined surface is provided at only one end of said crystal blank.

As for claim 8, in addition to what was explained above in Oda in view of Fukuyo and Nishimura, in Column 1 lines 37-38 of Oda, Oda teaches a crystal unit wherein said mounting member is a casing having a recess. In Column 3 lines 54-56, Oda teaches a crystal unit where connection terminals are formed on the bottom face of said recess.

As for claim 9, in addition to what was explained above in Oda in view of Fukuyo and Nishimura, in Column 1 lines 35-36 of Oda, Oda teaches a crystal unit comprising a cover which covers said recess, wherein said crystal blank is hermetically sealed in said recess with said cover.

As for claim 10, in addition to what was explained above in Oda in view of Fukuyo and Nishimura, in Column 2 lines 31-32, Oda teaches a crystal unit wherein said crystal blank comprises a quartz crystal unit. Oda does not teach a crystal unit wherein said crystal blank comprises an AT-cut crystal unit.

Fukuyo teaches in Column 1 lines 20-22, a crystal unit wherein said crystal blank is an AT-cut crystal unit. It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the crystal blank using an AT-cut quartz crystal unit because quartz crystals oscillators are widely used in frequency and time reference sources and it is was well known that an AT-cut crystal resonator is most efficient and superior among known various type of resonators.

Claims 4-6 are being rejected under 35 U.S.C. 103(a) as being unpatentable over by Oda (U.S. Patent 6,452,460) in view of Fukuyo (U.S. Patent 4,167,686) and Nishimura (U.S. Patent 6,859,116) and in further view of Wakabayashi (U.S. Patent 5,585,687).

As for claim 4, in addition to what was explained above in Oda in view of Fukuyo and Nishimura and in further view of Wakabayashi (U.S. Patent 5,585,687), Wakabayashi teaches a crystal unit wherein said inclined surfaces are formed at both opposed end of said crystal blank as shown in Figure 8. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the teaching of Oda in view of Fukuyo and Nishimura in further view of Wakabayashi to make a crystal unit wherein said inclined surfaces are formed at both opposed end of said crystal blank because as stated in Nishimura in column 9 lines 54-55, the resonance frequency of the crystal unit can be finely adjusted by trimming the inclined ends of the electrodes and therefore by having inclined surfaces at opposed ends is beneficial if a mistake is made in the trimming of an electrode at one end, the other inclined end can be used to compensate for the mistake.

As for claim 5, in addition to what was explained above in Oda in view of Fukuyo and Nishimura and in further view of Wakabayashi, in Column 8 lines 41-45 of Wakabayashi, Wakabayashi teaches a crystal unit wherein said inclined surfaces are different from each other in size at the respective ends and in Column 9 lines 49-54,

Wakabayashi teaches a crystal unit where said extension electrodes are extended toward the greater inclined surface.

As for claim 6, in addition to what was explained above in Oda in view of Fukuyo and Nishimura and in further view of Wakabayashi, in Column 8 lines 57-61 of Wakabayashi, Wakabayashi teaches a crystal unit wherein said crystal blank has a substantially rectangular shape as a two-dimensional shape and where inclined surfaces are formed at both ends in a longitudinal direction of said crystal blank.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc J. Mursko whose telephone number is 571-272-8394. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on 571-272-2044. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

03/24/2005 MM

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